

70 year old female with
bilateral hand pain.

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A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. It features detailed vein patterns and a lobed edge.

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A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off it. The leaf's edge is serrated.

Scleroderma



Frontal radiographs of the hands show scattered subcutaneous and periarticular globular calcifications.



Lateral radiograph of the hands again shows globular and periarticular and subcutaneous calcifications.

Scleroderma

Imaging Features

- Punctate or globular calcinosis, most commonly in the hand.
 - Can lead to mechanical bony erosion
- Flexion contracture deformities
- Acroosteolysis
 - Resorption of tufts with eventual resorption of distal phalanx
- Arthritis late
 - Erosions and cartilage loss
 - 1st CMC subluxation
 - DIP erosions

Scleroderma

General Features

- Autoimmune disorder of unknown etiology that results in widespread angiopathy and fibrosis
 - Vascular endothelial damage leads intimal thickening with luminal narrowing resulting in an impaired angiogenic response
 - Increased collagen and fibrotic tissue within the dermis
- Female predominant, with up to 80% female in progressive systemic sclerosis and a 3:1 ratio in limited sclerosis (CREST).

Scleroderma

General Features

- Fibrotic tissue within dermis leads to flexion contracture and functional disability
- Amorphous calcification is very common, especially of the hand, where it is present in up to 85% of cases.
- Vascular injury results acro-osteolysis, tapering of skin at the ends distal digits, and calcinosis
- Subluxation at the first CMC joint is thought to be the hallmark of the disease.
 - Resorption of the trapezium and base of first metacarpal leads to proximal and radial subluxation of the thumb

References

1. Avouac J, Guerini H, Wipff J, et al. Radiological hand involvement in systemic sclerosis. *Annals of the Rheumatic Diseases*. 2006;65(8):1088-1092. doi:10.1136/ard.2005.044602.
2. Bassett, L., Blocka, K., Furst, D., Clements, P., & Gold, R. (1981). Skeletal findings in progressive systemic sclerosis (scleroderma). *American Journal of Roentgenology*, 136(6), 1121-1126. doi:10.2214/ajr.136.6.1121